APPENDIX

APPENDIX A

(The Chronological Development of the Statutory Basis for the Requirement of Utility)

THE CONSTITUTIONAL PROVISION (1787)

Art. 1, Sec. 8. The Congress shall have power . . . To promote the progress of science and *useful** arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.

PATENT ACT OF 1790

1 Statutes at Large, 109

An Act to promote the progress of useful Arts

§ 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That upon the petition of any person or persons to the Secretary of State, the Secretary for the Department of War, and the Attorney-General of the United States, setting forth that he, she, or they hath or have invented or discovered any *useful** art, manufacture, engine, machine, or device, or any improvement therein not before known or used, and praying that a patent may be granted therefor, it shall and may be lawful to and for the said Secretary of State, the Secretary for the Department of War, and the Attorney-General, or any two of them, if they shall deem the invention or discovery *sufficiently useful** and important, to cause Letters Patent to be made out in the name of the United States, . . .

PATENT ACT OF 1793

1 Statutes at Large, 318

An Act to promote the progress of useful Arts; and to repeal the act heretofore made for that purpose

§ 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That when any person or persons, being a citi-

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* Emphasis added.

zen or citizens of the United States, shall allege that he or they have invented any new *and useful** art, machine, manufacture, or composition of matter, or any new *and useful** improvement on any art, machine, manufacture, or composition of matter, not known or used before the application, and shall present a petition to the Secretary of State, signifying a desire of obtaining an exclusive property in the same, and praying that a patent may be granted therefor, it shall and may be lawful for the said Secretary of State to cause Letters Patent to be made out in the name of the United States, ...

PATENT ACT OF 1836

5 Statutes at Large, 117

An Act to promote the progress of the useful arts, and to repeal all acts and parts of acts heretofore made for that purpose

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§ 6. *And be it further enacted,* That any person or persons, having discovered or invented any new *and useful** art, machine, manufacture, or composition of matter, or any new *and useful** improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent, in public use or on sale, with his consent or allowance, as the inventor or discover; and shall desire to obtain an exclusive property therein, may make application, in writing, to the Commissioner of Patents, expressing such desire, and the Commissioner, on due proceedings had, may grant a patent therefor . . . .

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§ 7. *And be it further enacted,* That on the filing of any such application, description, and specification, and the

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* Emphasis added.

payment of the duty hereinafter provided, the Commissioner shall make, or cause to be made, an examination of the alleged new invention or discovery; and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale with the applicant's consent or allowance prior to the application, *if the Commissioner shall deem it to be sufficiently useful and important**, it shall be his duty to issue a patent therefor. . . .

CONSOLIDATED PATENT ACT OF 1870

16 Statutes at Large, 198

An Act to revise, consolidate, and amend the Statutes, relating to Patents and Copyrights

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§ 24. *And be it further enacted,* That any person who has invented or discovered any new *and useful** art, machine, manufacture, or composition of matter, or any new *and useful** improvement thereof, not known or used by others in this country, and not patented, or described in any printed publication in this or any foreign country, before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the duty required by law, and other due proceedings had, obtain a patent therefor.

§ 31. *And be it further enacted,* That on the filing of any such application and the payment of the duty required by law, the commissioner shall cause an examination to be made of the alleged new invention or discovery;

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* Emphasis added.

and if on such examination it shall appear that the claimant is justly entitled to a patent under the law, and that the same is *sufficiently useful and important**, the commissioner shall issue a patent therefor.

THE REVISED STATUTES

(As Approved June 22, 1874.)

Relating To Patents

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§ 4886. Any person who has invented or discovered any new *and useful** art, machine, manufacture or composition of matter, or any new *and useful** improvement thereof, not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon the payment of the fees required by law, and other due proceedings had, obtain a patent therefor.

§ 4893. On the filing of any such application and the payment of the fees required by law, the Commissioner of Patents shall cause an examination to be made of the alleged new invention or discovery; and if on such examination it shall appear that the claimant is justly entitled to a patent under the law, and that the same is *sufficiently useful** and important, the Commissioner shall issue a patent therefor.

PATENT ACT OF 1897

29 Statutes at Large, Page 692, Chap. 391

An Act revising and amending the statutes relating to patents

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section forty-eight hundred and eighty-six of

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* Emphasis added.

the Revised Statutes be, and the same hereby is, amended . . . so that the clause so amended will read as follows:

"§ 4886. Any person who has invented or discovered any new *and useful** art, machine, manufacture, or composition of matter, or any new *and useful** improvements thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceeding had, obtain a patent therefor."

[FROM THE PATENT ACT OF 1952:]

§ 101. Inventions patentable

Whoever invents or discovers any new *and useful** process, machine, manufacture, or composition of matter, or any new *and useful** improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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* Emphasis added.

APPENDIX B

Early Federal Cases in the Lower Courts Discussing Usefulness or Utility, Arranged Chronologically

CASE No. 8,568

LOWELL v. LEWIS

[1 Mason. 182; 1 Robb, Pat. Cas. 131.]

Circuit Court, D. Massachusetts. May Term, 1817.

This was an action on the case for the infringement of a patent right. March 23, 1813, Mr. Jacob Perkins obtained a patent for a new and useful invention in the construction of pumps, . . .

Story, Circuit Justice (charging jury). . . .

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The defendant asserts, in the first place, that the invention is neither new nor useful; . . .

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To entitle the plaintiff to a verdict, he must establish, that his machine is a new and useful invention; and of these facts his patent is to be considered merely prima facie evidence of a very slight nature. He must, in the first place, establish it to be a useful invention; for the law will not allow the plaintiff to recover, if the invention be of a mischievous or injurious tendency. The defendant, however, has asserted a much more broad and sweeping doctrine; and one, which I feel myself called upon to negative in the most explicit manner. He contends, that it is necessary for the plaintiff to prove, that his invention is of general utility; so that in fact, for the ordinary purposes of life, it must supersede the pumps in common use. In short, that it must be, for the public, a better pump than the common pump; and that unless the plaintiff can establish this position, the law will not give him the benefit of a patent, even though in some peculiar cases his inven-

tion might be applied with advantage. I do not so understand the law.

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All that the law requires is, that the invention should not be frivolous or injurious to the well-being, good policy, or sound morals of society. The word "useful," therefore, is incorporated into the act in contradistinction to mischievous or immoral. For instance, a new invention to poison people, or to promote debauchery, or to facilitate private assassination, is not a patentable invention. But if the invention steers wide of these objections, whether it be more or less useful is a circumstance very material to the interests of the patentee, but of no importance to the public. If it be not extensively useful, it will silently sink into contempt and disregard.

CASE No. 1,217

BEDFORD v. HUNT et al.

[1 Mason, 302; 1 Robb, Pat. Cas. 148.]

Circuit Court, D. Massachusetts. Oct. Term, 1817.

This was an action on the case for the infringement of a patent right. Bedford, [on July 16,] 1806, obtained a patent for a new and useful improvement in the making of boots, bootees, and shoes.

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In the course of the argument, the following questions of law were made to the court. 1st. What degree of usefulness in an invention or improvement the law required, in order to support a patent?

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STORY, Circuit Justice, (after stating the facts.) No person is entitled to a patent under the act of congress unless he has invented some new and useful art, machine, manufacture, or composition of matter, not known or used before. By useful invention, in the statute, is meant such

a one as may be applied to some beneficial use in society, in contradistinction to an invention, which is injurious to the morals, the health, or the good order of society. It is not necessary to establish, that the invention is of such general utility, as to supersede all other inventions now in practice to accomplish the same purpose. It is sufficient, that it has no obnoxious or mischievous tendency, that it may be applied to practical uses, and that so far as it is applied, it is salutary. If its practical utility be very limited, it will follow, that it will be of little or no profit to the inventor; and if it be trifling, it will sink into utter neglect. The law, however, does not look to the degree of utility; it simply requires, that it shall be capable of use, and that the use is such as sound morals and policy do not discountenance or prohibit. In the present case there cannot be the slightest doubt, upon the evidence, that the patent is for a useful invention, in a very large sense.

CASE No. 13,957

THOMPSON et al. v. HAIGHT et al.

[1 U. S. Law J. 563.]

Circuit Court, S. D. New York. 1826

VAN NESS, District Judge. The patent in question is dated on the 12th day of August 1820. The specification annexed, is in these words: "This invention or improvement, in the composition, or making, or manufacturing, of ingrained carpets or carpeting, consists in making the warp thereof, that is, the threads that extend lengthways of the same, of cotton, flaxen tow, or hempen yarn or thread, and weaving or combining them therewith, in the manner of weaving carpets or carpeting; . . .

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It has been seen, plainly, I think that the subject of a patent must be both "new" and "not known or used, before the application." It must also be "useful". This term has been defined to mean such an invention as is

"not frivolous, or injurious to the well being, good policy, or sound morals of society" (Lowell v. Lewis [Case No. 8,568]); such an invention "as may be applied to some beneficial use in society in contradistinction to an invention which is injurious to the morals, the health, or the good order of society" (Bedford v. Hunt [Id. 1,217]). A more enlarged and comprehensive signification may safely and properly be ascribed to the term "useful". It may well be added, that it must be an art, &c., not mischievous to the state, or generally inconvenient, which brings it within the terms of the British statute. It seems to me to have been used and intended as equivalent to that clause in the sixth section of the statute of James, which defines the nature of the new manufactures which will be exempted from the general prohibition of the act. What, if I may be allowed the phraseology, can be less useful than a patent that interrupts the practice of an art, &c., commonly known? What more pernicious to the state than the monopoly of a machine or manufacture already in use? I should not hesitate to decide, under this expression in the act, if the point were presented, that such an art, &c., or such a machine or manufacture, were not patentable, and that the grant was void. As this case, in my view of it, does not turn on this point, it is not necessary to pursue its investigation further.

CASE NO. 17,896

WINTERMUTE v. REDINGTON

[1 Fish. Pat. Cas. 239.]

Circuit Court, N. D. Ohio. Dec., 1856

WILLSON, District Judge (charging jury).

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The general character of the patentee's invention, as declared in the patent itself, is, "a new and useful improvement in the application of hydraulic power."

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In the second place, is this alleged invention new and useful?

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There are certain legal rules which will govern you in testing the novelty and utility of this invention. And I may here remark, that the word "useful," in the section of the statute which I have quoted, is not used for the purpose of establishing general utility at the test of a sufficiency of invention to support the patent. It is used merely in contradistinction to what is friviolous or mischievous to the public. Mr. Justice Story has illustrated this rule by saying that "a new invention to poison people, or to promote debauchery, or to facilitate private assassination, are not patentable inventions. But if the invention steers wide of these objections, whether it be more or less useful, is a circumstance very material to the patentee, but of no importance to the community." It is quite sufficient if it has any utility. The plaintiff, then, has answered the requirements of the law, if his invention in usefulness is but a slight improvement on former wheels, even though it be for an improvement upon what is old.

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It is true that a patent can not be sustained for a mere principle. For instance, Sir Isaac Newton's discovery of the principle of gravitation could not be the subject of a patent. But it is equally true, that a principle may be embodied and applied, so as to afford some result of practical utility in the arts and manufacturers, and that under such circumstances a principle may be the subject of a patent. It is, however, the embodiment and the application of the principle which constitute the grant of the patent. And it has been justly said "that the principle of such embodiment and application, are essentially distinct; the former being a truth of exact science, or a law of natural science, or a rule of practice; the latter a practice founded upon such truth, law, or rule."

CASE No. 10,662

PAGE v. FERRY

[1 Fish. Pat. Cas. 298.]

Circuit Court, E. D. Michigan. Oct., 1857

WILKINS, District Judge (charging the jury).

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He alleges, in the statement of his cause of action, that "he was the original inventor of a new and useful improvement in the portable circular saw mill, described in his patent. . . .

* * * * * * * * * *

The utility of the invention is an essential requisite to the validity of the patent. A useless invention, even if patented, is not, and never will be, of any profit to the public. But the law prescribes a rule, by which you must be governed in applying this test to the invention now in controversy. It is this: Is it frivolous? Is it mischievous? Is it of any use? A general utility is not prescribed by the statute as the test of the sufficiency of the invention. The word is used in contradistinction to what is frivolous, or what is mischievous to the public.

New inventions in regard to some trifling article of dress, such as hoops, or crinolines, or, in the language of Judge Story, "a new invention to poison people," are not patentable. The one is frivolous, the other mischievous.

An invention not obnoxious to these objections, whether more or less useful if it be of any use, is embraced within the spirit of the law. A slight improvement of an old machine is a useful improvement. But, if the alleged invention should be absolutely hurtful or injurious, it is no improvement—it is not "a useful invention," and, it is your province to determine, from the evidence of witnesses experienced in the subject-matter, the validity of this objection.

CASE No. 12,292

Ex parte SANDERS

[3 App. Com'r Pat. 438.]

Circuit Court, District of Columbia. Feb. 20, 1861

Appeal [by D. G. Sanders] from the decision of the commissioner of patents, refusing him a patent for alleged improvement in constructing powder mills.

DUNLOP, Chief Judge.

* * * * * * * * * *

The appellant's proposed inner strong built tower would be of no patentability, unless it was shown to be a protection to life and property in the usual and ordinary manufacture of gun powder. No such proof is given and in the absence of it, as the examiner properly argues, the grant of a patent would mislead the public, and tend to engender a false security in manufactures and workmen, producing, perhaps, greater risk of life and property than now exists, in this dangerous manufacture. I think the commissioner was right in sustaining the examiner board of appeals, and refusing the appellant a patent.

I have no power, as is intimated in the fourth reason of appeal, to send the case back to the office, to prove, by competent experts, the alleged utility of the structure or to receive or hear such proof on this appeal.

CASE No. 18,285

CROMPTON v. BELKNAP MILLS et al.

[3 Fish. Pat. Cas. 536.]

Circuit Court, D. New Hampshire. May, 1869

This was a bill in equity [by George Crompton against the Belknap Mills and others] filed to restrain the defendants from infringing letters patent [No. 6,939] for

"an improvement in looms for weaving figured fabrics," granted to Moses Marshall, December 11, 1849, . . .

* * * * * * * * * * *

Before Clifford, Circuit Justice, and Clark, District Judge. Clark, District Judge . . .

His invention must, therefore, be taken to be new. Precisely how useful it may be, the court have not undertaken to decide; but that it is sufficiently so to support a patent, we have no doubt. Other looms may have been preferred by different persons, or may have found a readier sale; but that good cloth can be woven by Marshall's loom and invention there is sufficient evidence. To warrant a patent, the invention must be useful, that is, capable of some beneficial use, in contradistinction to what is pernicious, or frivolous, or worthless. Dickinson v. Hall, 14 Pick. 217; Whitney v. Emmett [Case No. 17,585]; Many v. Jagger [Id. 9,055].

APPENDIX C

Cases in the Supreme Court Discussing Usefulness or Utility, Arranged Chronologically

In *Seymour* v. *Osborne,* 11 Wall. (78 U.S.) 516 (1870), the Court stated as follows at pages 548-9:

"New and useful machines are the proper subjects of an application for a patent, and so, by the express words of the act of Congress, are new and useful improvements on any machine.

* * * * * * * * * *

"Improvements for which a patent may be granted must be new and useful, within the meaning of the patent law, or the patent will be void, but the requirement of the patent act in that respect is satisfied if the combination is new and the machine is capable of being beneficially used for the purpose for which it

> was designed, as the law does not require that it should be of such general utility as to supersede all other inventions in practice to accomplish the same object."

However, the patent involved in *Seymour* was for a reaping machine, and hence the Court did not have before it the precise question with which we are here concerned.

In *Densmore* v. *Scofield,* 102 U.S. 375 (1880), the Court stated as follows at page 378:

> "There is no novelty and no utility. It does not appear (to use the language of appellants' brief) that there was 'a flash of thought' by which such a result as to either was reached, or that there was any exercise of the inventive faculty, more or less thoughtful, whereby anything entitled to the protection of a patent was produced. It strikes us that the entirety and all the particulars of the summary and the claims are frivolous and nothing more."

Since the Densmore et al patent there involved was directed to "a new and useful improved oil-tank car for carrying petroleum and other like substances in bulk", it seems obvious that the Court was not referring to utility in the sense in which it is used in the present case. It would seem that the Court's remarks must be construed as referring to what we would today call lack of unobviousness under 35 U.S.C. § 103.

In *McClain* v. *Ortmayer,* 141 U.S. 419 (1891), the Court stated as follows at page 427:

> "Counsel for the plaintiff in the case under consideration has argued most earnestly that the only practical test of invention is the effect of the device upon the useful arts—in other words, that utility is the sole test of invention, and, inferentially at least, that the

> utility of a device is conclusively proven by the extent to which it has gone into general use."

and as follows at page 429:

> "While this court has held in a number of cases, even so late as *Magowan* v. *The New York Belting and Packing Co. ante,* 332, decided at the present term, that in a doubtful case the fact that a patented article had gone into general use is evidence of its utility, it is not conclusive even of that—much less of its patentable novelty."

The McClain patent there involved was for "a pad for horsecollars", which assuredly at that time at least had utility in the sense with which we are here concerned. There, however, the Court was evidently using the term by way of referring to commercial use or acceptation.

In *Gandy* v. *Main Belting Company,* 143 U.S. 587 (1892), the Court stated at pages 593 and 594-5 as follows:

> "(3) The questions of novelty and utility may properly be considered together."
>
> * * * * * * * * *
>
> "While some of the testimony would seem to indicate that there is no great advantage in this method of construction, we think the fact that it has been largely adopted by manufacturers and that all the modern improved belting ordered or made by Gandy and in general use both in this country and in Europe, is made in this way, is, for the purposes of this case, sufficient evidence of its utility. *Magowan* v. *New York Belting Co.,* 141 U.S. 332."

The Gandy patent there in suit was for "an improved belt or band for driving machinery and an improved mechanical process for manufacturing the same", and so it

seems obvious that there "utility" and "commercial success" were synonymous.

In *Grant* v. *Walter,* 148 U.S. 547 (1893), the Court remarked as follows at page 556:

> "The advantages claimed for it, and which it no doubt possesses to a considerable degree, cannot be held to change this result, it being well settled that utility cannot control the language of the statute, which limits the benefit of the patent laws to things which are new as well as useful. The fact that the patented article has gone into general use is evidence of its utility, but not conclusive of that and still less of its patentable novelty. *McClain* v. *Ortmayer,* 141 U.S. 419, 425, and authorities there cited."

The Grant patent there involved was for the "art of reeling and winding silk and other thread", and the remarks made above in connection with the *McClain* case apply equally here.

In *DuBois* v. *Kirk,* 158 U.S. 58 (1895), the Court observed at pages 63-64 as follows:

> "That it is a useful improvement can scarcely be doubted. Indeed, in view of the fact that John DuBois made application for a similar patent himself, and that he and the defendant, since his death, have constantly made use of a device which differs from that of Kirk's only in the fact that he relieves the pressure by lowering the end of the forebay to a level beneath the apex of the dam, it does not lie in defendant's mouth to deny its utility. The presumptions, at least, are against him. *Lehnbeuter* v. *Holthaus,* 105 U.S. 94; *Western Electric Co.* v. *LaRue,* 139 U.S. 601, 608; *Gandy* v. *Main Belting Co.,* 143 U.S. 587, 595."

The Kirk patent of that case was for "a new and useful improvement in movable dams". The Court there refers

to a still different kind of utility, but nevertheless one unlike the utility of the present case.

In *Diamond Rubber Company* v. *Consolidated Rubber Tire Company*, 220 U.S. 428 (1911), we find the following comments on so-called utility.

(at page 433:)

> "Anticipating somewhat, we may say that the tire has utility is not disputed; to what its utility is to be attributed is in controversy."

(at page 434:)

> "The tire has utility, a utility that has secured an almost universal acceptance and employment of it, as will subsequently appear."

(at page 440:)

> "The utility of the Grant patent, therefore, was not attained in the Willoughby patent. The Rubber Company's conduct is confirmation of this. It uses the Grant tire, as we shall presently see, not the Willoughby tires."

(at page 441:)

> "That the tire is an invention is fortified by all of the presumptions, the presumption of the patent by that arising from the utility of the tire. And we have said that the utility of a device may be attested by the litigation over it, as litigation 'shows and measures the existence of the public demand for its use.' *Eames* v. *Andrews, supra.* We have shown the litigation to which the Grant tire has been subjected."

(at page 442:)

> "To what quality the utility of the tire may be due will bear further consideration, if for no other reason than the earnest contentions of counsel."

The Grant patent involved in that case was for an improvement in rubber tires for vehicle-wheels, and so an entirely different kind of "utility" was involved.

In *Beidler* v. *U. S.*, 253 U.S. 447 (1920), we find the following at page 453:

> "The application of these requirements of the law to our conclusion that the only form of construction of the machine and the only method of operation of it which are disclosed in the patent would not produce a sufficiently uniform and rapid development of the film to render it useful, must result in the approval of the judgment of the Court of Claims, that the patent is invalid and void, for the reason that it fails to disclose a practical and useful invention."

The Beidler patent there involved was for "an improvement in photographing and developing apparatus". From the Court's reference to failure "to disclose a practical and useful device," it is obvious that there was really no question of utility in the present sense but only one of lack of sufficiency of disclosure, or as we might put it today, the holding of invalidity was based on 35 U.S.C. § 112 rather than on 35 U.S.C. § 101.

Of all the Supreme Court cases that have discussed the question of utility or usefulness in any particular detail, the only one having language that might on first impression be thought to be applicable here is *Corona Cord Tire Company* v. *Dovan Chemical Corporation*, 276 U.S. 358 (1928). Excerpts from that case are as follows:
(at page 366:)

> "The patent contains twelve claims. Those mainly relied on are: the fourth, for 'The process of treating rubber or similar materials which comprises combining with the rubber compound diphenylguanidine'; the eighth, for 'The process of treating rubber or

similar materials, which comprises combining with the rubber compound a vulcanizing agent and diphenylguanidine;' and the twelfth, for 'A vulcanized compound of rubber or similar material combined with a vulcanizing agent and diphenylguanidine.' 'Vulcanizing is old and well known.' "

(at page 378:)

"In 1916, while with the Norwalk Company, Kratz prepared D.P.G. and demonstrated its utility as a rubber accelerator by making test slabs of vulcanized or cured rubber with its use. Every time that he produced such a slab he recorded his test in cards which he left with the Norwalk Company, and kept a duplicate of his own."

(at page 382:)

"Kratz was not seeking a patent. He inferred, with reason, that D.P.G. would not make a successful business accelerator because of its then cost. He is wholly disinterested pecuniarily in the result of this case.

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". . . he did discover in 1916 the strength of D.P.G. as an accelerator as compared with the then known accelerators, and that he then demonstrated it by a reduction of it to practice in production of cured or vulcanized rubber.

"This constitutes priority in this case. It was not followed by commercial use thereafter, because of the then cost of D.P.G."

(at page 383:)

"It is said that these tests of Kratz were mere abandoned laboratory experiments. There was no abandonment in the sense that Kratz had given up what

> he was seeking for in demonstrating a new and effective accelerator in D.P.G. If he had been applying for a patent for the discovery, he clearly could have maintained proof of a reduction to practice. *A process is reduced to practice when it is successfully performed.*" [Emphasis added]

(at page 384:)

> "It is a mistake to assume that reduction to use must necessarily be a commercial use. If Kratz discovered and completed, as we are convinced that he did, the first use of D.P.G. as an accelerator in making vulcanized rubber, he does not lose his right to use this discovery when he chooses to do so, for scientific purposes or purposes of publication, because he does not subsequently sell the rubber thus vulcanized, or use his discovery in trade, or does not apply for a patent for it. It is not an abandoned experiment because he confines his use of the rubber thus produced to his laboratory or to his lecture room."

At first it might be supposed that the Court's holding with respect to Kratz's work should be regarded as determinative of the present case. ("A process is reduced to practice when it is successfully performed"). This is not so, however, for a number of reasons. In the first place, these comments were not made with reference to the Weiss patent which was in suit, but with reference to the earlier work of another relied upon as a "reference" against the Weiss patent. They are therefore dicta. More important, however, is the fact that the patent in suit (as well as Kratz's work) related in terms to a vulcanizing process and the resulting product. Such a process and such a product seem unquestionably to have "utility" within any reasonable interpretation of the patent statutes, whether of the past or of the present.

APPENDIX D

Patents and the Conquest of Disease

By John T. Connor

President, Merck & Co., Inc.

It has been apparent for some years now that the ability of a free society to maintain a high rate of discovery in relation to that of the Soviet Union will largely determine the future complexion of history. It is therefore appropriate, it seems to me, that the National Research Council of the National Academy of Sciences should make a fresh examination of the contribution being made to our rate of discovery by the American patent system. It is a privilege to be asked to contribute to this examination.

Since the days when Robert Fulton got a patent on his steamboat, the environment of invention has shifted radically. Its modern home is the U. S. corporation, in whose laboratories roughly $10 billion will be spent this year. This is about 70% of the nation's total outlay for research and development. Pharmaceutical companies are spending well over $200 million of this, or better than 9 cents out of every dollar they take in. This is a higher percentage of its own money devoted to R & D than you will find in any other industry. The relation of patents to the rate of discovery of new drugs is therefore most pertinent to the subject you are examining.

First, let me say that no drugs were ever discovered in our laboratories just because they could be patented. Businessmen do not find them; the search is conducted by scientists who are motivated by a desire to penetrate the unknown and to conquer disease. The businessman's job is the organization of this search; our incentive is the re-

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Address delivered at the Symposium on the Effect of Patents on Research, National Research Council, National Academy of Sciences, Washington, D.C., June 14, 1961.

ward the American people give to those who make significant contributions to progress.

The partnership between the quest for scientific knowledge on the one hand and the drive for financial success on the other is one of the most powerful combinations developed by our free society. It has not only brought about the chemical revolution in medicine, it has transferred the work of our world from man to machine, powered our economic growth and built a mighty shield for the republic.

Case History

To show how this partnership works in my industry, I shall use the case history of the most important compound our company has discovered since we introduced vitamin B_{12} and cortisone. After telling the story of its development briefly, I shall then attempt to isolate the role that patents played.

The drug I have chosen is chlorothiazide, which I shall refer to by our trademark, Diuril. Diuril was chemistry's major contribution to medicine in 1958. It has saved countless lives. It is the first really safe and effective drug physicians have had for the treatment of edema, an often fatal condition associated with heart failure and other diseases. The victims of edema are unable to excrete fluids efficiently through the kidneys and literally become waterlogged. Diuril has also revolutionized the treatment of high blood pressure. Three or four million Americans are benefiting today from this discovery and from the new class of compounds that followed on its heels.

The Diuril story goes back to 1943 when our laboratory people, concerned because the treatment of certain diseases was being held back for lack of fundamental knowledge about the human kidney, launched a basic research project known as the Renal Program. During the following fifteen years, the Renal Program discovered two medically

significant drugs and added several striking new concepts to the theory and teaching of kidney physiology.

To direct the program, our research directors chose Dr. Karl H. Beyer, a young physiologist, and Dr. James M. Sprague, an organic chemist renowned for his discoveries in the field of sulfa drugs. Beyer and Sprague first tackled the problem of the excess excretion of penicillin, which went out through the kidneys so fast that four-fifths of it never reached the site of infection. In 1943 penicillin was so scarce that its waste could be counted in human lives.

Two Failures

Within a year, the Renal Program had proved for the first time in medical history that a chemical compound could prevent the excretion of a single substance without blocking the excretion of everything else. Unfortunately, the compound, PAH, was too inefficient to be useful in blocking penicillin.

It took three more years to find a better one—carinamide—but this turned out to be the second big failure. In the process of discovering it, though, the Renal Team developed an unorthodox theory which is too lengthy to explain here, even if I had the technical competence, but it opened up new horizons for renal physiology and therapeutics.

Finally, in 1951—almost eight years after the Renal Program began—we reached a drug that would do the job, our compound Benemid. But Benemid was born too late. Penicillin, by then, was both plentiful and cheap and medicine could easily afford to waste it. So Benemid became a remedy in search of a condition to relieve. One of the conditions that needed relief, I might add, was the company exchequer out of which the eight years of commercially fruitless research had been paid.

Fortunately for both medicine and the exchequer, a chance observation led to the discovery that Benemid increased the excretion of uric acid, the principal villain in gout. As a result, for the past ten years thousands of victims of this chronic, incurable disease have been beholden to this drug for saving them from the most severe effects of gout, including excruciating pain. Benemid, which was patented, helped finance the Renal Program through to its final achievement.

New Objective: Heart Disease

When the passage of time killed the usefulness of the penicillin project, the Renal Program chose as its next objective the discovery of a diuretic that would remove sodium chloride from the body and draw out with it the excess water associated with edema. This was considered at the time to be theoretically impossible, but by then the Renal Team felt they had accumulated enough fundamental knowledge about the kidney to find a way. It took them four more years and one more spectacular and costly failure to do it plus two more years of animal and human testing to be sure they had reached their objective. When they reached it, it was Diuril, which not only proved to be the first safe and effective diuretic in medical history, but it bore out the Renal Team's theory that a compound that would increase the excretion of salt would also lower blood pressure.

Now, let us try to isolate the role that patents played in this research. We can do this by seeing whether the major decisions made during the course of the Renal Program would have been different had the patent system not been in existence when these decisions were made.

Major decision No. 1 was to launch the Renal Program in the first place. In the absence of the patent system, such a basic research program on the human kidney would

have been economically unsupportable. Let me explain why. The normal function of an industrial laboratory is applied research and development. The amount of the financial commitment is within predictable limits. Basic research, on the other hand, is a corporate luxury.

When you are searching for the unknown you are—by definition—paying an unknown price for an unknown result. About 99 times out of 100 the cost turns out to be high and the result turns out to be zero. During World War II, for instance, Merck dumped the equivalent of $2 million in 1961 dollars into an effort to synthesize penicillin. We won praise from the scientific community for our contributions to knowledge. But we ended up with nothing we could sell. As a double punishment for failure we also lost our once commanding position in the penicillin market to competitors who had followed the more predictable applied research route of large-scale fermentation.

The kind of basic research that produced such historic contributions to medicine as cortisone, Diuril and the vitamins, B_6 and B_{12}—all of which were born in a Merck laboratory—is possible only if the potential reward is commensurate with the risk. The patent system was established to provide just such a reward and encourage just such a risk. In the absence of the patent system, physicians would still be helpless in the face of many—if not most—of the disease conditions these drugs alleviate. The basic research that brought them into being would not have been undertaken.

Research Without Patents

Let us now return to the Renal Program. Without the protection of the patent system, our laboratories might still have tackled the immediate research problem of finding a substance that would inhibit the excretion of peni-

cillin. But for how long? Perhaps the project might have survived failure No. 1—PAH, which took a year. But it is clear that the Renal Team would not have been supported for four years through failure No. 2—carinamide. Well before then they would have folded their tent and moved on to a more commercially promising line of inquiry.

What would have been lost? First, Benemid would not have been discovered in 1951. Since nothing comparable has turned up in the past ten years, we can assume that scores of thousands of sufferers from gout would have paid for this slowdown in the rate of discovery with a decade of frequent physical torture.

Second, Diuril would not have been born in 1958. No one knows how long the three or four million victims of edema and hypertension who have benefited from its discovery would still have to wait for the new lease on life brought them by this drug and its analogues.

Third, renal physiology and therapeutics would have lost the significant scientific papers contributed by Beyer, Sprague and others throughout the whole fifteen years of the Renal Program. Without the protection of patents, corporate research would have to be conducted in secrecy. One of the most valuable effects of the patent system is that it protects disclosure and encourages the sharing of newly discovered knowledge. This has been very evident in our industry. Merck scientists in one recent year published more basic research papers than those working for any but four of the largest corporations in the country—General Electric, Bell Telephone, Du Pont and American Cyanamid.

Fourth, the Merck Sharp & Dohme Research Laboratories would have lost the nourishing income produced by Benemid and Diuril since past discoveries pay for future research. How many of the one-thousand-plus employees in our research laboratories would still be there if the

patent system were abolished, and what they would be doing with whatever was left of their $20-odd million budget, I am not prepared to speculate.

By using the same case history approach I have with Diuril, I could cite chapter and verse from the development sagas of several sulfa drugs, streptomycin, cortisone and B vitamins. The facts—all taken from Merck's records—speak the same conclusion: without patents, the rate of significant drug discovery would eventually slow down to its pace in the Soviet Union, where it is only slightly ahead of the snail.

The Kefauver Patent Proposals

It is not just an academic exercise I have been taking you through in the past few minutes. It is on the verge of becoming a reality. Senator Kefauver right now is trying to drive a bill through Congress that is designed to remove both the encouragement and the protection of patents from the search for new drugs.

The Senator's bill would do this through three major provisions. First, it would cut the exclusive right to a patent down from seventeen years to three. Second, the three years would start running not from the date the patent is issued but from the date the new drug is permitted to be marketed by the Food & Drug Administration. Third, after three years, compulsory licensing would force the inventor to share not only his patent but also all his know-how with any competitor willing to pay a maximum royalty of 8%. Let us examine these provisions.

The three-year limitation would reduce by 80% the period when a patent is protected. It would be the first reduction in the term of a patent since 1790, when Congress, following the mandate written into the Constitution, passed the original patent statute. It would also be the first time a particular industry had been singled out for such discrimination.

The provision for starting the three-year term as of the date the new drug is marketed would, for all practical purposes, complete the process of wiping out the protection of patents. This is because, in the case of a high percentage of new drugs, patents do not issue until at least three years after the product is put on the market. Patent interference suits account for most of this delay. The overburdened machinery of the Patent Office accounts for the remainder.

Compulsory Licensing

To get a complete understanding of what the patent provisions of the Kefauver bill would do to the search for new drugs, we have to examine the effects of the third major proposal—the one for compulsory licensing, which requires the concurrent surrender of all know-how. A clear picture of this will emerge from another look at the case history of Diuril.

After more than fifteen years of research by Merck men and women trained in twenty-five different specialties, including a year of testing the new compound on animals, fourteen more months of testing it on patients by 1,000 clinical physicians in this and eighteen foreign countries and extensive chemical engineering development to learn how to manufacture a safe and effective product on a mass production basis—after all this, we launched Diuril on the market. We then spent several million dollars to inform physicians about the drug's medicinal properties—good and bad—perfected our method of manufacture, and invested nearly $10 million in manufacturing facilities here and abroad to satisfy the world-wide demand.

Three years after we had introduced Diuril on the market Senator Kefauver would have the government step in and order us to turn over everything we had learned to any number of our 1,300 competitors in this country and—

even more serious—to any foreign producer who can get a license to sell in the U. S.

The result would be to reward us for our eighteen years of work and a magnificent contribution to the health of the American people by literally forcing us to subsidize our competitors here and abroad. These "freeloaders" could get into the business by merely writing a letter. They would have contributed nothing to the research, shared none of the risks and paid for none of the original costs. Their maximum investment, if any, would be the cost of duplicating our plant after we turned over our blueprints and technical data to them. Most of those "coattail riders" would not make any investment at all but would merely buy the drug—probably from a low-cost foreign licensee—in bulk for repackaging and sale to an already established market.

This is a most unusual way to promote progress. The Senator's proposal is that those companies that do research subsidize those that do none so that the imitators can sell below the costs of the creators. It reminds one of what Voltaire had Candide say while observing the incentive system of 18th century England. The British had just hanged an admiral. "In this country," Candide explained, "it is found good, from time to time, to kill one admiral in order to encourage the others."

Prices and Competition

The author of the Kefauver bill explains the purpose of its patent provisions rather differently. They are designed, he says, to lower prices by increasing competition. He ignores the fact that prices have been steadily falling for years even in the face of rising costs. The composite index for all drugs sold by Merck's ethical pharmaceutical division dropped 17% from 1953 to 1960. The record of the entire industry shows a decline of over 7% in prices

charged by pharmaceutical manufacturers to their customers from 1949 to 1959—a time when nearly all other prices went up.

If, in the face of this record, he still thinks that prices are too high—a conclusion he is fond of stating but has never proven—why does he not ask Congress directly for price control? He is smart enough to realize, of course, that to be effective price control would have to cover not just the manufacturers but the thousands of local retail and wholesale pharmacies, hospitals and even fees charged by doctors for drug therapy. Instead of that politically unattractive alternative, he has selected the route of tinkering with patent incentives, thereby risking the destruction of the fiercest and most socially useful competition in the industry, which is the competition between laboratories. By robbing research of the rewards for medically significant discoveries, the Kefauver bill would not increase this kind of competition. It would strangle it and divert the creative energies of the industry into the advertising and sale of the status quo.

It is clear from the record that the effect of patents in our industry has been to foster research competition and thus increase the rate of discovery of new and effective drugs. Since the late 1930s when our then infant industry, with the aid of patents, started to organize research for the war against disease, we have been able to make a contribution to the health of the American people that is comparable to what technology has done for their wealth. In those two short decades the life expectancy of our population has risen by 10% and the list of major terror diseases has been reduced, mainly through the invention of new medicines, to a handful.

Most of the important new medicines have not come, as is popularly supposed, from the scientists of our universities or government, or, as Senator Kefauver would have

the public believe, from abroad. Of the top twenty-five therapeutically most useful drugs—that is, those most frequently prescribed by today's physicians—six were combinations and therefore of mixed parentage. Of the remaining nineteen, twelve were born in the laboratories of the U. S. pharmaceutical industry. One was discovered at Yale by a researcher working under a grant from an American company. The remaining six came from abroad —one of them from Oxford and the rest from our competitors in Germany, France and Austria.

Partners In Discovery

Aside from the adverse effects on the pharmaceutical industry, the patent provisions of the Kefauver bill are contrary to the public interest. By destroying the patent incentive for research, this bill could well destroy pharmaceutical research itself. It would reduce the great creative companies in the U. S. pharmaceutical industry to the level of their counterparts in the Soviet Union, which merely copy what others have invented. It would stop in midstream many of the most promising inquiries into the nature and control of illness. It would slow down the rate of new drug discovery and defer our ultimate victory over heart disease, cancer and mental illness. By doing so it would cost countless American lives.

The nation is on the road toward the conquest of disease through research. Our hopes and our hearts are in this battle. And hope deferred, as Solomon said, maketh the heart sick.

APPENDIX E

Statement of

WALTER A. MUNNS

President, Smith Kline & French Laboratories

before

Subcommittee on Patents, Trademarks and Copyrights

of the

Committee on the Judiciary

UNITED STATES SENATE

Thursday, August 19, 1965

Statement of Walter A. Munns,

President, Smith Kline & French Laboratories,

accompanied by Dr. J. Kapp Clark,

Vice President of Research and Development

Mr. Chairman and members of the Subcommittee, my name is Walter A. Munns. I am President of Smith Kline & French Laboratories of Philadelphia, a manufacturer of prescription drugs. I am accompanied by Dr. J. Kapp Clark, Vice President of Research and Development.

My career with the company started 36 years ago. In 1945, I was named a Vice President, became Executive Vice President in 1956, and in May of 1958, was elected President of the company.

The history of Smith Kline & French Laboratories goes back through 124 years of continuous operation. More than 5,000 people are employed by the company, 3,500 in this country and about 1,500 abroad. We have 30 foreign subsidiaries or branches, and own and operate manufacturing plants in five foreign countries. Our products are

marketed throughout the world. With annual sales around $200 million, the company is among the top 10 prescription drug companies in America and has approximately 14,000 shareholders. In 1965, we plan to spend about $23 million for research.

I have requested an opportunity to testify before this Subcommittee in order to comment broadly and generally on the impact upon my company of government patent policy.

I should like to emphasize, however, that although in this testimony I represent the point of view of Smith Kline & French, I am also firmly convinced that I represent the interests of the American people. Our common objective is certainly the health of our nation, which has already so greatly benefited by the development of the breakthrough drugs that have practically eliminated some diseases and greatly reduced the death rate and length of illness from others. Our objective must be the most rapid possible development of new medicines, and whatever new legislation is proposed should in the public interest be geared towards the greatest possible stimulation of medical and drug research.

* * *

First of all, I would like to make clear the tremendous gulf there is—in terms of time, research effort and money—between a new and patentable chemical compound and a safe and effective medicine in a bottle that can be used to treat human beings.

I should like to begin by briefly describing the background of the last product we introduced, a new diuretic discovered by my company and marketed in 1964. The work on this product is typical of pharmaceutical research and development—whether or not government funds are involved—and a description of it will, I believe, give you an idea of the great amount of time and money we spend on our R and D program.

Indicated for the treatment of water retention in body tissue from widely varying causes, this product is effective in many patie ts resistant to other diuretics and, in combination with other diuretics, potentiates their effects. It has the advantage of not causing loss of potassium from the body, an undesirable characteristic of many other diuretics.

This compound, whose generic name is triamterene, was discovered as part of a program of research we were conducting on diuretic agents, and a patent was applied for in 1959. Though it is impossible to allocate exact costs, the expense of this patentable invention probably did not exceed $50,000. Then came the major part of the research and development effort, the transformation of the compound triamterene into the medicine we market under the trademark 'Dyrenium'. This work on 'Dyrenium' took 5½ years and cost over $2 million. The following table summarizes, in time and costs, the various stages in its development:

Activity	Months	Cost To SK&F
1. From beginning of animal tests to decision to test in man	15	$350,000
2. From beginning of clinical testing to New Drug Application submission	18	735,000
3. From New Drug Application to Food and Drug Administration approval	33	1,014,000
Grand Total	5 yrs./ 6 mos.	$2,099,000

This was a hazardous speculation. At any time during this process the product might have been shown to have

some property that would have made it unsuitable for human administration, and our work and expenses to that date would have gone for nothing. We could never have justified this speculation without the exclusivity provided by a patent.

In the case of 'Dyrenium', there was of course no question of patent protection. We have the patent rights. The cost of the original research and the subsequent development was paid for by Smith Kline & French Laboratories alone.

But many of the important drugs now in use or under current investigation have been discovered through collaboration between academic scientists and drug companies, and, with proper legislation, this collaboration should become even more productive in the future because of the great expansion in the government's investment in medical research. Although the Subcommittee is undoubtedly familiar with the process of collaborative research in the health field, I would like to amplify certain aspects of it, since it is so different from that in certain other fields where the government normally makes a research contract with a *commercial concern.*

What usually happens in the health field is this. The government makes a research grant to an academic scientist in a nonprofit institution, such as one of our great universities, to investigate a given field. In the course of this investigation, the scientist discovers a new compound, but he does not know what this compound will do to human beings. He may have a hunch that it has medicinal use because of its chemical relationship to known medicinal agents. But he cannot be sure; and the odds against its being a valuable medicine are estimated to be five thousand to one. It is rare indeed that the chemist has the biological data about his compound upon which to base a prediction.

The only way in which the medicinal value of his compound can be demonstrated is by exhaustive testing, first

in animals, then in humans. For the most part, universities do not have the time and facilities for the required animal testing nor is this type of testing in keeping with their academic purpose. It is logical, then, that the discoverer of a new compound goes to a drug firm for help since, as the Subcommittee knows, industry does have complete facilities and long experience in testing chemicals in animals. For example, in 1964, SK&F used more than 500,000 animals in its testing program. Let me emphasize again that such tests offer the only way in which knowledge can be gained about the therapeutic action of a drug before it is evaluated in man.

Drug testing in animals has today become so complex that new methods of testing are often invented as the investigation proceeds. For example, in the research on the diuretic project I mentioned, conventional tests had failed to show diuretic activity—and on that basis the compound might have been shelved. In devising ways to test other agents for diuretic activity, however, a new test was developed, and this test revealed that our compound did have diuretic activity.

After it has been determined in animals that a compound has an activity which suggests a medically useful effect in humans, the even greater hurdle of determining its activity, safety and effectiveness in man must be overcome. Drug companies work closely with hospitals and other medical centers to study drugs in humans, and they have techniques and specialized skills for evaluating the resulting data. This phase of developing a medicinal product—known as clinical testing—involves hundreds of physicians, thousands of patients and takes at least two years to carry out. If the evidence shows that the drug is safe and effective in humans, the final step is to secure marketing approval from the Food and Drug Administration.

Another complication in this process I have been describing is the development of a suitable dosage form—one that

will permit the patient's body to absorb and utilize the active ingredient of the drug product. Work on this task begins fairly early in the process and requires the solving of a number of difficult technical problems.

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I have emphasized the role of our industry in making a medicine available to the public because I would like the Subcommittee members to bear this point in mind as I now discuss the kind of patent policy I believe is needed to stimulate drug research—and to bring new medicines to the American people.

First of all, is it not true that the keystone of a sound policy as to government patents is to lay out a system which will produce the maximum utilization of inventions for the benefit of the public?

With "maximum utilization by the public" as the criterion, certain facts would appear pertinent.

1. Our American patent system is almost universally considered as being one of the most potent factors producing this country's industrial and scientific progress. It is based on the premise that the granting of marketing exclusivity for a given period of time is the best way of bringing new inventions into widespread use.

2. If this reasoning is sound, it is obvious that it should apply to the health field to the same extent that it applies to other fields. A new chemical compound will not help a sick person until it has been made into a medicine, and the whole reason for medical research is to help cure sick people.

3. Any patent legislation or any government patent policy that discourages collaboration between university scientists and drug companies is likely to slow up the development of new medicines.

• • •

As I mentioned earlier, the discovery of new medicines should, in the public interest, more and more involve the collaboration of university scientists and drug companies. For effective collaboration, both the university scientist and the drug company must have incentives—first to invent the compound and then to make the speculative investment required to turn it into a medicine. These incentives have traditionally been provided by our patent system. Indeed, the encouragement to invent—to "promote the progress of science"—is the purpose of the patent system. It seems contradictory to remove this incentive from the health field.

In my opinion, the existing government patent policy for the health field discriminates against academic-industrial collaboration by providing that, if government money is given to the university scientist, the government takes the patent rights. With rare exceptions, the university, the university scientist or the drug firm (which may have spent many hundreds of thousands of dollars for development) do not get any exclusive rights.

I can illustrate the complications that now arise under present patent policy by another example from our own experience. Back in 1959, my company began working with a university scientist who had been studying certain steroids for several years under a Public Health Service grant of $26,000 a year.

We have a program in the field of atherosclerosis and heart disease, and were determining the effect of compounds on blood cholesterol. This effect was not one of those specifically under investigation by the university scientist nor was it contemplated in the PHS grant. We were able to demonstrate through exhaustive tests in animals that the compound in question lowers the cholesterol level of blood without the side effects which, in the past, have limited other drugs used for this medical purpose. We are now at the point where the compound should be given to humans

for preliminary evaluation. But to date we have been unable to conclude an agreement that will give us reasonable exclusive rights, even though our investment in development already amounts to approximately $250,000 and may well amount to a couple of million dollars before the compound becomes a medicine for human use. We are continuing to negotiate.

The situation I have just described will increasingly be a problem in the future as more and more federal money is contributed through grants to hospitals, universities, medical schools and medical centers. Can drug firms collaborate with these institutions if industry is denied a reasonable equity in resulting discoveries? My own opinion is that drug firms will have to shy away from such collaborative research under existing government patent policy—as indeed they are already doing.

I therefore urge the Subcommittee, in considering legislation, to aim at providing the maximum—not the minimum—incentives for medical discovery to university scientists and to the drug industry. I urge this because I sincerely believe that such a policy is in the national interest and that it will bring the greatest good to the American people. A very clear principle is involved. Our patent system stimulates the discovery of new and useful products and processes, and its incentive should not be reduced or denied in the field of health.

* * *

I would like to suggest the following principles, which, in my opinion, should be considered in determining the form of any new patent legislation involving inventions with federal support.

1. Where a scientist working in a nonprofit institution and supported by government funds discovers a new compound that may have medicinal use, the patent rights should belong to his institution, subject to certain government-retained controls.

2. The nonprofit institution should have the right to negotiate with industry to carry out screening, testing and development work, and may further negotiate a royalty-bearing license with industry upon such terms as they may agree upon—subject again to government-retained controls. The license agreement may also define the respective rights of the nonprofit institution and the industrial concern as to new uses and related development and improvements which may result from collaborative work between them.

3. In view of the substantial expenses which must be borne by the industrial concern to develop and test the compound—and considering that the royalties will accrue to the institution and be available for further research (with such reward to the individual inventor as the institution deems appropriate)—the license to the concern must be attractive enough to invite its participation in this research and development.

We have given considerable thought to specific amendments to S. 1809 and plan to submit them to the Subcommittee at the earliest possible date.

That concludes my comments, Mr. Chairman. Thank you for your courtesy.

APPENDIX F

STERLING DRUG INC.
90 PARK AVENUE, NEW YORK, N. Y. 10016

July 19, 1965

Mr. Ellsworth H. Mosher, Chairman
Chemical Practice Committee
American Patent Law Association
Suite 300 Munsey Building
Washington, D. C. 20004

Re: Brenner, Commissioner of Patents

v.

Andrew John Manson

(No. 58 in the Supreme Court of
the United States)

Dear Mr. Mosher:

In behalf of the respondent in the above-entitled cause, we hereby consent to your filing in the United States Supreme Court an *amicus curiae* brief on behalf of the American Patent Law Association.

Very truly yours,

STERLING DRUG INC.

DAVID RASCH
Vice President

APPENDIX G

OFFICE OF THE SOLICITOR GENERAL
WASHINGTON, D.C. 20530

August 9, 1965

W. Brown Morton, Jr., Esq.
President
American Patent Law Association
425 13th Street, N.W.
Washington, D. C. 20004

Re: Brenner v. Manson (No. 58)

Dear Mr. Morton:

In reply to your letter of August 5, I am pleased to advise you that the government consents to the filing of a brief *amicus curiae* by the American Patent Law Association in the above-captioned case.

Sincerely,

RALPH S. SPRITZER
Ralph S. Spritzer
Acting Solicitor General